

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P243444

Luminaire Tested: **S123RDR-H340D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243444
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-69)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDR-H340D935-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1087.5 lumens
Efficiency: N/A
Efficacy: 97.1 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.22 / 1.4
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

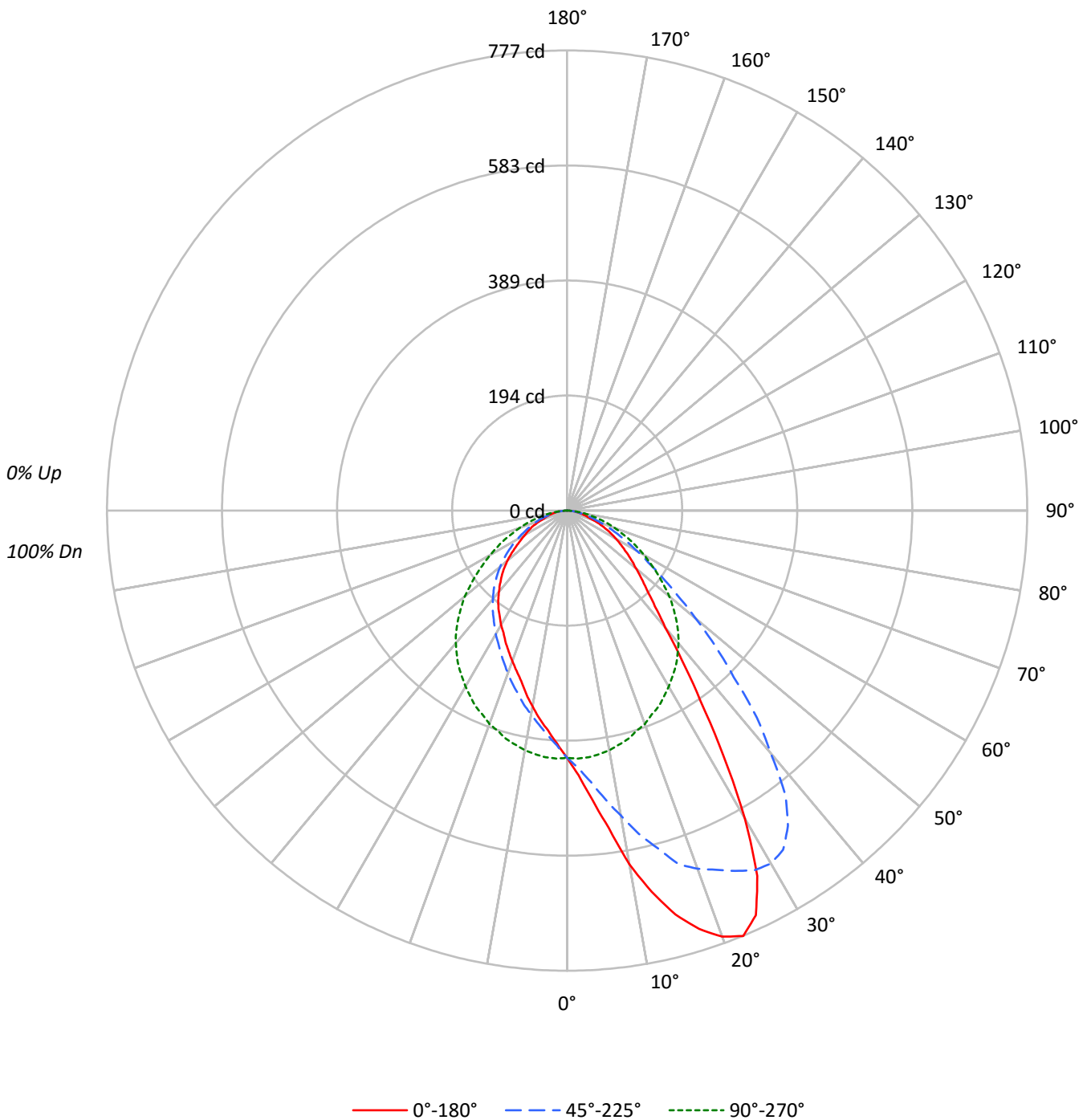
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	89	87
2	101	94	88	83	99	92	86	82	89	84	80	85	81	78	82	79	76	74
3	93	84	76	70	91	82	75	70	79	73	68	76	71	67	74	70	66	64
4	86	75	67	61	84	74	66	60	71	65	59	69	63	59	67	62	58	56
5	79	68	59	53	77	66	59	53	64	57	52	62	56	52	61	55	51	49
6	74	61	53	47	72	60	52	47	59	52	46	57	51	46	55	50	46	44
7	69	56	48	42	67	55	47	42	54	47	41	52	46	41	51	45	41	39
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	35
9	60	47	39	34	59	47	39	34	45	39	34	44	38	34	43	38	33	32
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	5059	5059	5059
5°	5965	5087	4530
10°	7466	5057	4134
15°	8861	5007	3745
20°	9874	4947	3487
25°	10080	4886	3283
30°	8399	4802	3123
35°	5802	4737	2992
40°	4078	4628	2834
45°	3274	4464	2681
50°	2855	4250	2482
55°	2559	3935	2208
60°	2315	3634	2000
65°	2025	3350	1870
70°	1634	3016	1584
75°	1419	2623	1555
80°	1305	2241	1557
85°	1154	1808	1349



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.9	3.8
10°-20°	128.9	11.9
20°-30°	206.5	19.0
30°-40°	224.2	20.6
40°-50°	192.1	17.7
50°-60°	145.6	13.4
60°-70°	93.0	8.6
70°-80°	44.5	4.1
80°-90°	11.7	1.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	376.4	34.6
0°-40°	600.6	55.2
0°-60°	938.3	86.3
0°-90°	1087.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1087.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	417	417	417	417	417	
5°	490	460	418	380	372	50
15°	706	590	399	320	298	200
25°	754	671	365	265	246	334
35°	392	650	320	217	202	252
45°	191	398	260	172	156	151
55°	121	195	186	123	104	109
65°	71	94	117	74	65	70
75°	30	37	56	35	33	33
85°	8	9	13	10	10	9
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4
2.5°	447.3	447.8	446.9	446.8	446.6	443.7	442.8	441.3	436.3	435.0	434.1
5°	490.2	488.7	490.4	487.3	483.9	481.9	478.6	471.4	465.1	460.1	456.8
7.5°	541.0	541.5	539.9	537.0	530.2	527.3	518.5	509.8	501.5	491.1	483.3
10°	606.6	602.3	603.2	594.2	587.0	578.3	566.2	552.4	537.8	523.0	512.0
12.5°	658.9	661.9	659.8	655.4	641.6	633.1	622.1	601.9	578.8	559.0	542.3
15°	706.1	701.9	702.5	692.0	687.0	679.2	661.0	641.0	626.1	590.2	570.4
17.5°	740.7	740.3	739.8	730.9	724.8	708.6	690.0	669.5	650.8	625.9	601.0
20°	765.5	768.3	767.5	760.3	749.5	733.8	722.7	697.1	666.3	643.5	613.1
22.5°	777.4	777.6	778.0	774.6	767.4	757.3	741.4	720.9	693.5	656.3	622.5
25°	753.7	754.6	759.2	762.1	764.1	759.6	751.3	732.8	709.1	671.3	636.2
27.5°	695.3	698.1	703.4	720.7	727.7	737.4	740.9	733.5	716.0	684.5	644.4
30°	600.1	608.2	613.3	632.9	660.5	686.4	698.7	710.8	709.1	688.2	647.7
32.5°	491.3	496.5	511.1	532.2	554.0	592.0	634.5	663.7	680.1	679.0	650.4
35°	392.1	399.7	412.1	428.2	458.3	497.8	545.9	591.8	632.9	650.0	639.8
37.5°	318.3	319.0	330.7	353.4	372.1	406.9	450.4	507.1	561.0	605.7	615.6
40°	257.7	262.8	268.9	283.1	305.3	338.6	367.5	423.3	479.2	535.2	575.2
42.5°	219.5	219.5	226.3	235.4	250.1	270.1	304.6	355.2	405.5	474.3	519.4
45°	191.0	192.8	195.9	201.7	212.1	227.6	254.3	288.7	340.1	397.9	465.7
47.5°	170.5	170.3	173.0	176.4	184.5	196.3	211.9	239.9	277.9	340.2	400.1
50°	151.4	152.1	154.1	157.0	162.4	170.7	180.6	201.7	233.7	283.1	345.8
52.5°	136.6	136.4	138.0	139.8	144.0	148.7	157.5	173.2	195.4	234.6	286.7
55°	121.1	121.8	123.8	124.9	128.3	131.4	138.8	147.6	165.4	195.0	242.4
57.5°	107.8	108.7	109.8	110.8	113.2	116.2	122.4	127.8	140.7	162.0	199.9
60°	95.5	95.2	96.4	98.2	99.5	102.2	105.6	111.2	120.2	135.3	163.1
62.5°	83.3	83.4	83.6	84.7	87.0	89.4	92.4	96.6	102.0	113.2	132.8
65°	70.6	70.8	71.2	72.3	74.6	76.1	79.3	82.9	87.2	93.9	107.6
67.5°	59.5	60.2	60.2	61.1	62.0	63.4	65.8	68.5	72.1	77.0	85.8
70°	46.1	46.0	46.9	48.7	49.6	52.1	53.7	55.5	58.7	61.8	69.4
72.5°	37.1	37.1	37.1	37.8	38.0	38.6	39.6	43.4	46.0	49.0	53.2
75°	30.3	30.5	30.5	30.6	30.8	31.4	31.7	32.8	33.5	36.8	39.3
77.5°	24.1	24.3	24.3	24.5	24.7	24.9	25.6	25.6	26.1	26.9	27.9
80°	18.7	18.6	18.6	18.7	18.7	19.3	19.3	19.6	19.8	20.2	20.7
82.5°	13.3	13.2	13.3	13.2	13.3	13.5	13.9	13.7	14.1	14.4	14.6
85°	8.3	8.5	8.5	8.8	8.7	8.5	8.7	8.7	8.7	8.7	9.0
87.5°	3.6	4.0	4.0	3.8	4.0	4.0	3.6	4.0	4.0	4.0	4.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4
2.5°	433.6	432.9	430.2	427.6	423.9	422.2	420.1	419.2	416.3	412.3	410.5
5°	453.8	448.4	443.1	436.8	431.6	425.5	422.1	418.1	412.0	406.4	402.4
7.5°	475.2	467.3	457.6	447.1	437.7	428.9	421.3	415.0	407.1	399.4	393.2
10°	498.8	485.3	469.6	456.3	442.8	430.0	420.4	410.9	400.6	390.9	383.5
12.5°	524.2	505.1	486.2	466.2	446.0	431.3	417.0	404.8	393.2	383.0	374.1
15°	550.6	524.4	500.3	477.7	449.6	429.8	414.1	399.0	384.6	372.0	363.3
17.5°	569.3	539.4	508.9	477.0	452.9	428.4	408.9	389.8	376.5	363.5	351.8
20°	586.6	552.7	516.5	486.8	453.1	423.1	401.9	383.5	364.9	351.1	341.1
22.5°	594.0	563.3	526.8	485.5	451.8	421.2	393.8	373.0	356.5	341.3	328.4
25°	595.4	561.2	523.7	483.9	446.9	413.8	386.0	365.3	343.7	328.0	317.9
27.5°	601.7	554.9	518.1	478.5	441.0	406.4	377.2	354.1	333.9	317.2	304.2
30°	603.4	552.2	506.2	468.4	429.8	395.9	366.4	343.1	321.1	304.0	292.3
32.5°	604.1	548.6	493.8	452.3	415.6	383.7	356.6	331.4	310.5	292.5	280.4
35°	601.6	543.5	478.8	434.1	398.8	367.5	342.4	320.1	296.8	279.9	267.1
37.5°	591.6	535.6	470.4	412.9	379.2	349.6	328.4	306.4	284.9	266.5	253.4
40°	572.9	524.1	454.5	395.0	356.8	330.3	310.5	292.5	270.9	253.2	240.2
42.5°	543.0	508.4	439.9	374.8	334.7	309.6	293.0	277.5	258.1	241.3	227.1
45°	498.7	486.4	420.4	354.3	310.5	286.9	272.5	260.4	242.7	227.4	214.3
47.5°	450.7	453.4	400.8	333.4	288.5	266.0	253.4	242.7	229.4	213.0	200.9
50°	395.4	410.2	373.2	312.3	266.5	244.4	231.9	225.4	213.0	199.3	188.0
52.5°	344.7	368.2	345.3	289.2	244.9	223.1	211.6	205.1	196.8	185.4	173.9
55°	292.3	322.0	305.5	264.4	222.9	200.9	191.2	186.2	179.3	170.5	160.0
57.5°	248.9	280.6	270.1	238.2	201.5	181.7	173.0	167.2	163.1	155.0	146.5
60°	206.3	235.7	231.6	208.1	180.2	161.3	154.6	149.9	146.5	140.6	132.3
62.5°	166.5	195.0	197.5	179.1	159.5	142.4	136.2	133.0	130.3	125.6	118.0
65°	132.1	157.1	162.4	148.3	137.7	124.7	118.8	116.8	114.8	109.4	103.6
67.5°	103.4	123.1	129.9	122.0	114.4	106.9	102.2	99.5	98.0	94.8	90.8
70°	79.1	96.1	101.8	98.4	93.4	90.5	86.9	85.1	83.6	79.5	77.3
72.5°	59.3	70.8	78.0	77.0	75.9	73.9	71.7	71.2	69.0	66.3	64.3
75°	43.4	50.1	56.6	58.9	58.6	59.3	56.9	56.0	54.8	52.8	51.2
77.5°	31.2	35.1	39.6	42.5	44.0	44.2	44.2	43.6	42.7	41.3	40.0
80°	21.6	22.5	26.7	29.4	30.8	31.9	31.9	32.1	31.2	30.6	29.7
82.5°	15.0	15.5	16.4	18.6	20.4	21.6	21.8	21.6	21.3	21.1	19.8
85°	9.4	9.2	9.2	9.7	11.2	12.4	12.6	13.0	12.8	12.6	11.4
87.5°	4.0	4.0	4.1	4.0	4.5	4.7	5.0	5.9	5.8	4.9	4.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4
2.5°	409.4	407.1	404.9	402.6	399.7	397.0	396.7	396.3	397.2	395.4	394.7
5°	399.4	394.8	391.4	387.1	384.0	380.1	377.9	377.4	377.2	376.1	374.7
7.5°	388.4	383.5	378.6	373.8	368.7	364.6	362.2	361.0	359.9	358.1	356.6
10°	378.1	372.0	366.7	360.1	354.7	349.3	347.1	345.3	344.2	341.7	339.7
12.5°	366.6	358.8	353.0	345.8	341.0	336.3	332.9	329.4	326.9	323.1	321.5
15°	356.5	348.4	338.6	334.3	327.4	320.4	316.6	316.6	311.4	308.3	306.4
17.5°	342.9	335.9	329.1	320.2	310.5	306.4	302.0	298.3	294.7	293.7	290.1
20°	331.1	322.8	315.7	306.2	297.4	292.5	287.4	283.3	280.6	278.1	276.1
22.5°	319.3	311.0	300.2	290.9	284.9	278.4	273.0	269.4	267.1	263.3	261.5
25°	307.1	297.2	287.4	278.3	270.9	265.3	259.7	257.7	253.6	251.6	249.1
27.5°	294.8	282.9	273.7	265.8	257.5	252.1	248.3	244.7	241.1	240.0	238.6
30°	281.1	270.1	261.3	253.6	245.6	240.9	236.4	233.2	230.1	227.8	226.2
32.5°	267.4	258.2	249.8	240.8	233.6	228.5	224.7	221.8	220.4	216.4	215.0
35°	254.8	245.5	236.4	228.0	222.2	217.3	213.9	211.2	208.1	205.6	204.2
37.5°	241.8	233.4	224.2	217.0	210.5	206.5	202.7	199.1	196.8	195.4	193.5
40°	229.2	220.2	213.2	205.3	199.5	195.0	191.0	188.3	185.4	184.2	181.8
42.5°	217.3	208.7	200.6	193.4	188.1	183.8	180.0	177.0	174.6	172.3	171.0
45°	203.6	196.1	188.7	181.5	176.6	171.9	167.8	165.1	161.8	159.8	159.1
47.5°	192.1	184.2	176.2	169.6	164.5	159.5	156.1	152.8	150.1	148.1	147.1
50°	178.4	171.0	164.5	157.9	153.0	147.6	143.5	140.4	137.3	135.9	134.1
52.5°	166.7	159.5	151.6	145.6	140.0	135.3	131.6	129.0	126.3	124.2	122.9
55°	152.1	145.1	138.8	132.5	126.9	123.1	120.0	115.7	113.4	111.2	107.8
57.5°	139.3	132.6	126.0	119.8	114.6	110.1	106.3	103.4	100.4	98.8	96.4
60°	125.8	118.8	112.6	107.9	102.2	97.3	94.8	91.4	88.8	86.3	85.6
62.5°	112.5	106.0	99.8	95.0	89.7	86.0	82.7	81.1	78.6	76.6	75.9
65°	98.6	93.2	87.4	82.0	78.8	74.4	72.6	69.9	68.5	67.6	67.4
67.5°	84.9	80.0	74.8	70.6	67.6	64.7	62.5	61.5	60.0	58.9	58.0
70°	72.4	67.8	63.3	59.8	57.5	55.3	53.9	51.9	50.5	49.0	47.0
72.5°	60.2	56.4	52.6	49.9	47.6	46.3	44.3	41.3	39.8	39.5	39.3
75°	48.8	44.7	42.0	40.5	38.4	35.3	34.1	33.7	33.5	33.2	33.2
77.5°	37.7	35.1	33.3	30.3	29.2	29.0	28.1	27.9	27.6	27.8	27.8
80°	27.4	26.0	23.8	22.9	22.5	22.7	22.3	22.5	22.2	22.3	22.0
82.5°	18.2	16.9	17.3	16.8	16.8	17.1	16.9	16.4	16.4	16.2	16.2
85°	10.8	10.6	11.0	11.0	10.8	10.3	10.6	10.5	9.9	10.1	10.1
87.5°	4.7	4.7	4.7	4.5	4.7	4.5	4.5	4.5	4.0	4.0	4.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P243444

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CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	417.4	417.4	417.4	417.4
2.5°	395.0	394.7	394.1	393.6
5°	374.7	373.0	372.9	372.3
7.5°	355.6	354.8	353.6	355.0
10°	338.1	338.6	337.4	335.9
12.5°	319.9	318.8	316.8	317.9
15°	303.8	302.0	301.0	298.4
17.5°	287.1	285.6	285.6	284.0
20°	272.5	271.0	271.4	270.3
22.5°	260.2	259.1	257.5	257.7
25°	248.7	247.1	245.3	245.5
27.5°	235.9	234.5	234.1	232.8
30°	224.5	223.3	223.1	223.1
32.5°	213.6	213.0	212.1	211.6
35°	204.0	203.3	201.8	202.2
37.5°	192.1	191.4	191.2	191.0
40°	180.9	180.4	179.0	179.1
42.5°	169.8	168.9	168.0	167.6
45°	157.7	157.5	156.1	156.4
47.5°	146.2	145.8	145.1	144.2
50°	133.4	133.2	132.6	131.6
52.5°	120.9	120.4	119.3	118.2
55°	106.9	105.2	105.4	104.5
57.5°	95.3	94.6	93.2	92.6
60°	84.2	83.4	83.3	82.5
62.5°	74.8	74.1	73.5	73.5
65°	66.3	65.4	65.2	65.2
67.5°	56.9	56.0	55.9	55.5
70°	45.2	45.1	44.7	44.7
72.5°	38.9	38.7	38.9	38.2
75°	33.2	33.0	33.0	33.2
77.5°	27.6	27.6	27.4	27.4
80°	21.8	22.0	21.8	22.3
82.5°	16.4	16.0	16.2	15.9
85°	10.1	10.1	9.7	9.7
87.5°	4.0	4.0	4.0	4.0
90°	0.0	0.0	0.0	0.0

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